FISHERY MARKET NEWS

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FISHERY MARKET NEWS

A REVIEW OF CONDITIONS AND TRENDS OF THE COMMERCIAL FISHERIES

May 1941 Washington, D. C. Vol. 3, No. 5

SUMMARY

Special Articles

Fishery Market News and Standardization of Fish and Fishery Products.--The Fishery Market News Service is helping to establish more orderly commerce in fishery products by using a standard term to designate each product and each important trade size or grade covered by its reporting system. Other Federal agencies are also furnishing services which establish standards of fish nomenclature, quality, or measure. Strong demands and need exist for increased standardization. The Service is working with the fishery industries and other Federal and State agencies to adequately meet the needs of this phase of fish marketing.

Studies on the "Pink" Discoloration of Commercially Shucked Oysters.--"Pink" coloration of oysters may be reduced by chemical treatment of oyster shucking houses and equipment. Treatment with formalin and acetic acid is suggested.

Fresh Fish

March vessel landings of fish at Boston, Gloucester, and Portland were valued at over a million and a quarter dollars. This covered 35,400,000 pounds of fishery products.

The Chicago Wholesale Market received 6,241,000 pounds of fishery products in March, almost one-quarter more than those received in March 1940.

Frozen Fish

Warehouses in the United States and Alaska held 35,568,000 pounds of frozen fishery products on April 15, a 29 percent drop from a month earlier. Frozen in the month ending April 15 were 8,327,000 pounds of fishery products.

At the end of April, Boston plants held 6,267,000 pounds of frozen fishery products, plants in New York held 4,560,000 pounds, and plants in Chicago held 4,138,000 pounds.

Canned Fish

Only 233,000 cases of canned salmon remained unsold in the hands of packers on April 30. This was only 22 percent as large as the total of April 30, 1940.

Shrimp canning was virtually dormant in April, and in March the pack of California sardines was small. Tuna and mackerel canning in California was less in March than in March of 1940.

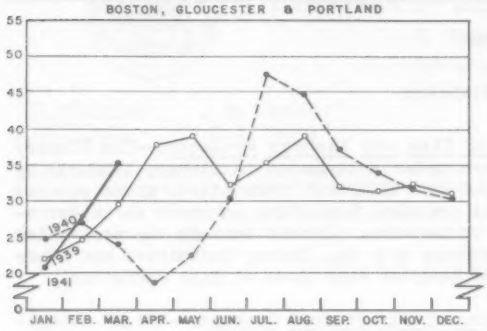
Foreign Fishery Trade

United States foreign trade in March included exports of 4,921,000 pounds and imports of 24,407,000 pounds of edible fishery products.

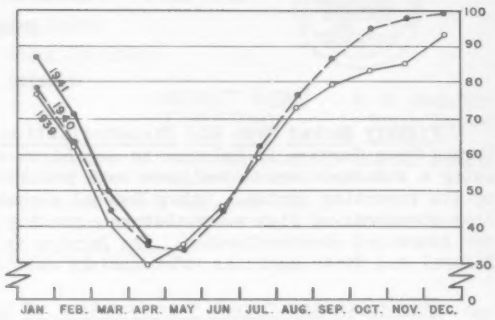
TRENDS OF FISHERY TRADE

In millions of pounds

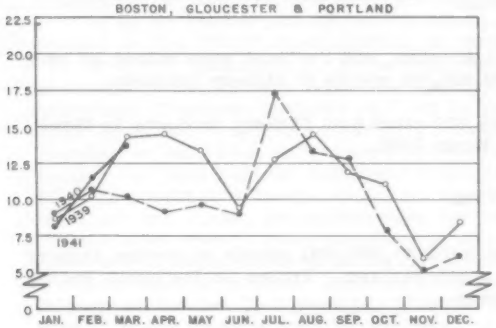
VESSEL LANDINGS, ALL FRESH FISH
BOSTON, GLOUCESTER & PORTLAND



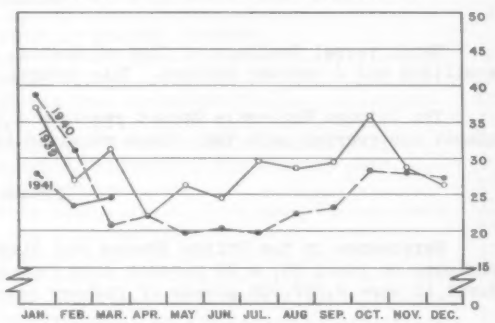
DOMESTIC COLD-STORAGE HOLDINGS OF FROZEN FISH



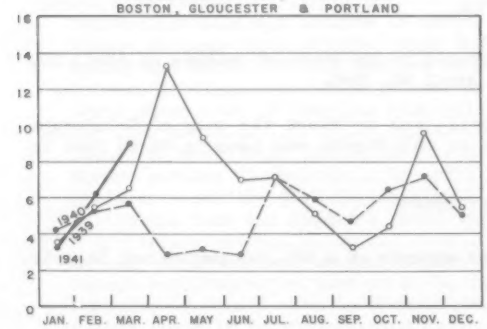
VESSEL LANDINGS, FRESH HADDOCK
BOSTON, GLOUCESTER & PORTLAND



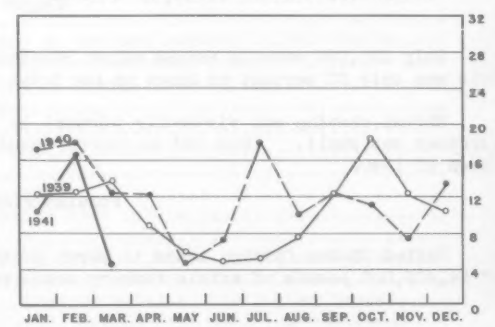
IMPORTS OF EDIBLE FISHERY COMMODITIES



VESSEL LANDINGS, FRESH COD
BOSTON, GLOUCESTER & PORTLAND



EXPORTS OF EDIBLE FISHERY COMMODITIES



FISHERY MARKET NEWS AND STANDARDIZATION OF FISH AND FISHERY PRODUCTS

(Address delivered by R. H. Fiedler, Chief, Division of Fishery Industries, Fish and Wildlife Service, before National Association of Marketing Officials, Atlantic States Division, Washington, D. C., April 23, 1941.)

The Fishery Market News Service conducted by the Fish and Wildlife Service of the Department of the Interior now reports currently on the production, distribution, and sale of about one-half of the country's supply of fresh food fish and a like proportion of the frozen stocks. This information is gathered in six offices located in the nation's most important fishery centers and disseminated to the industry by means of daily mimeographed reports, weekly, monthly, and annual summaries, and by daily radio broadcasts.

Our most recent office has just finished its first year of operation in New Orleans, the center of the important shrimp fishery in the Gulf of Mexico and near important oyster areas. The other offices are located wherever we could get the greatest volume of accurate information completely and quickly. In New York, for example, we are situated in the most important primary market in the country. About a quarter billion pounds of fresh and frozen fishery products pass through its wholesale markets each year--fish from practically every State in the Union, from most of the Provinces of Canada, and from a score of foreign countries. In Boston we are located across the street from the largest Fish Pier in the world--1,200 feet long and 300 feet wide. Primarily a fishing port, Boston's landings have reached 300 million pounds annually, and frequently dealers on the Pier handle over two million pounds each day.

The primary market for fresh-water fish is Chicago, also an important distributing center for salt-water products. Here our local office in the wholesale fish district keeps daily account of the 60 million pounds which are shipped in during the year. In Seattle our office on the waterfront near the fish exchanges brings together the widespread operations of the Pacific Coast salmon and halibut fisheries. Local landings plus reports from as far south as northern California and as far north as southeastern Alaska are coordinated and wired to midwestern and eastern markets. When the rigors of winter diminish catches in northern waters our Florida office begins its busy season. From its location in Jacksonville it straddles most of Florida's outgoing fishery products, in an excellent position to furnish advance information on production, origin, varieties, and destination.

The distribution and marketing of the production of many of our more important fisheries is no longer merely of local or regional interest. It has expanded to a countrywide problem. Gulf of Mexico shrimp are found on Great Lakes and New England tables. Boston groundfish fillets are commonplace throughout the Middle West, and Alaskan salmon and halibut are marketed up and down the Atlantic Coast. Transmitting information on these and similar products from market news office to market news office soon emphasized the need for standards in the fishery industry.

All of you are familiar with standards as applied to agricultural products and undoubtedly have aided your States in developing standards of quality or measure. The value of standards is so obvious that I need not dwell long on the advantages. To sell and buy efficiently, widely separated producers and dealers must talk the same language--there must be no confusion as to the meaning of names, sizes, or designations of quality. Orderly marketing can only occur if seller and buyer have certain standards to which they adhere, and which the product meets. The stimulation of trade through uniform standards of measure and quality is exceedingly important but there are many other valuable adjuncts. For example, fishery standards would permit a market dealer to have his supply of frozen fish prepared and stored at the point of production until needed, rather than have them brought all the way to the market before freezing, in order to be sure that they meet his specifications. Standards would permit loans on frozen fish just as the dealers now may borrow on warehoused butter, eggs, or apples. And, of course, standards would bring an inevitable improvement in quality and result in numerous economies in transportation and distribution.

Our New York Market News office has experienced particular difficulty with the lack of standards in the fish industry. Our market quotations in New York are disseminated widely throughout the country because of the innumerable fishing areas supplying Fulton Market.

Quotations understandable to one production point often were unintelligible to another. Crab meat is a case in point. Depending on the producer who shipped it, crab meat might be known as "De Luxe", "Special", "Ham cut", and similar meaningless designations. Our quotations for competitive products from different areas were not readily comparable and even the buyer often was forced to inspect each can before he knew what to bid. After a period of education we now quote crab meat as "Lump", "Flake", or "Claw". If two grades are in the same can we quote "Lump and flake mixed, mostly flake".

A similar situation prevailed with shrimp. Shrimp were quoted as "Jumbo", "Large", "Medium", and "Small". Unfortunately these sizes were not definite. They not only varied from shipping point to shipping point but they also varied with the supply available. Frequently the largest shrimp on the market on a given day would be quoted as "Jumbo" despite the fact that that size had only rated as "Large" a few days earlier in the presence of bigger shrimp. Confronted again with the difficulty of comparing and understanding quotations, we were able to secure prices on a "count" basis. All our offices now quote southern shrimp in "cents per pound" accompanied with the approximate number of shrimp in one pound.

Our field offices are making some progress along these lines but the virtual absence of uniform standards, either State or Federal makes the task difficult. At present there are but few regulations which impose detailed standards on the industry. Standards of weight and length are imposed by most States with respect to minimum sizes of certain fish that may be taken and marketed commercially, but, to my knowledge, State standards of either quality or measure for fresh and frozen fishery products are virtually lacking. Minnesota's law covering the inspection and grading of fresh, frozen, and salted lake herring is an example of this type of State regulation. Processed fish such as tuna, sardines, and mackerel are packed under strict State supervision in California and the same is true with sardines in Maine.

Under the Seafood Amendment to the Federal Food, Drug and Cosmetic Act, the Food and Drug Administration exercises control over about 90 percent of the shrimp pack on the Gulf. Supervision by Food and Drug inspectors and acceptance of the standards they have set are voluntary rather than mandatory and apparently have worked well since their inauguration in 1934. Although the amendment is not limited to shrimp nor to hermetically sealed products, no other fishery product is prepared or distributed under like conditions.

The Food and Drug Administration also enforces certain minimum standards which fish, as well as other foods entering into interstate commerce, must meet. The most important of these deal with adulteration which includes the use of articles unfit for food, or food prepared, packed or held under unsanitary conditions. Misbranding, which, in effect, sets a minimum standard of identity, also is regulated.

The Federal Food, Drug and Cosmetic Act contains a provision permitting the setting up of standards. In substance, it provides that "whenever the Administrator of the Federal Security Agency thinks it will promote honesty and fair dealing in interest of consumers, he shall make regulations fixing for any food under its common or usual name, so far as practicable, a reasonable definition and standard of identity, a reasonable standard of quality, and/or reasonable standards of fill of containers." This provision, applied to fishery products, offers a means of obtaining standards developed and administered by the Food and Drug Administration.

The U. S. Public Health Service is particularly interested in shellfish. Through cooperative arrangements this Agency endorses shippers' certificates issued by States meeting the minimum requirements it specifies. These pertain mainly to origin, sanitary control, labeling, and shipment.

The Federal Trade Commission has promulgated trade practice rules for the sardine industry and the tuna industry. Both of these, however, deal only with the canned product. They are of interest mainly because they include instances of Federal grading. Canned sardines are "Seconds" if the can is overfilled or is dented, rusted, spotty or otherwise defective. Similarly, "Fancy tuna", "Standard tuna", and "Tuna flakes" are defined.

Federal Specifications as approved by the Director of Procurement for the use of all departments and establishments of the Government represent another approach to Federal standards. At present these specifications exist only for fresh fish, fresh clams, fresh

crab meat, and fresh oysters; for salted or smoked fish; and for canned crab meat, canned flaked fish, canned oysters, canned sardines, canned salmon, canned shrimp, and canned tuna. These specifications are rather general but are of special interest to the trade at this time due to large purchases of fish for our armed forces.

The cases I have mentioned are scattered examples of Federal grading. They affect but a few products in the fresh and frozen field, are limited in their applications, and apparently have not proved advantageous enough to engender a widespread demand for standards.

The Fish and Wildlife Service has always favored standards in principle and has aided efforts in this direction. Assistance has been given Virginia in the grading of shad and of canned and salted alewives. The National Recovery Administration, with which I served as deputy administrator in charge of fishery codes, desired grades but the proposals sponsored by the consumer's representative were very drastic and the industry refused to consider them.

The demand for standards for fishery products has been with us for a long time and is becoming stronger. Hospitals, schools, and similar institutions for years have wanted to purchase fish by grades. The more progressive elements in the fish industry have recognized their value and have prepared their own standards. Fish exchanges such as the New England Fish Exchange on the Boston Fish Pier and the salmon and halibut exchanges in Seattle have standards of weight and measure and, in some instances, quality.

The trend is toward standardized products. The Federal specifications for the purchase of fresh fish are being revised in line with modern products; our technologists are working on standards for oysters and have developed an electrometric method for determining the freshness of certain fish. Canada recently issued standards for smelt and now grades its exported product according to quality and size.

The industry is thinking of grades and has requested the institution of Federal standards as have some of the State governmental marketing agencies. In this connection about two years ago a bill was introduced in the Congress providing for mandatory or compulsory inspection and permissive or voluntary grading of fishery products by the Fish and Wildlife Service. The bill was introduced by New England interests and originally would have covered about three billion pounds of fishery products annually. Hearings were held on the bill before the Merchant Marine and Fisheries Committee with most of the industry opposed to its terms because of cost, difficulty of regulation, and, in some cases, duplication of services. Sponsors of the bill were willing to amend it to cover only frozen fish which would reduce its application to about 185 million pounds of fish annually. After the hearings over a year ago the Committee took no further action on the bill although the New England interests are still interested in applying it to frozen fish and are continuing their efforts with this in view.

This, then, is the status of standards with respect to fishery products. The general acceptance of standards for agricultural commodities is the best argument for their use for fishery commodities. It is our hope that uniform Federal standards may be developed for fish and we are directing our efforts along that line. Standards probably will not come all at once and possibly, for the best results, should be developed and applied slowly, particularly since their use is not compulsory. Perhaps the best program is to eliminate complicating factors and start in areas and with products offering the most favorable results. Possibly quality standards, being more difficult both to develop and enforce, should not be stressed until standards of nomenclature, length, and weight have been formulated and accepted.

State departments of Agriculture have done much to develop agricultural grades that were of assistance in preparing Federal standards for interstate use. The Service welcomes the same cooperation from those of you whose departments are concerned with the marketing of fish in the hope that we may achieve results equally beneficial for the fishing industry.

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STUDIES ON THE "PINK" DISCOLORATION OF COMMERCIALLY SHUCKED OYSTERS

By J. F. Puncochar, W. H. Baldwin, and S. R. Pottinger
Fisheries Technological Laboratory
College Park, Maryland

"Pink" discoloration of oysters has been reported by oyster packers at irregular intervals over a considerable period of time. In one of the earlier reports, A. C. Hunter (Bull. 819, U. S. Dept. Agr., 1920) stated that a pink yeast-like fungus was the agent responsible for pink discoloration in oysters that were grown in the New England area. He determined that the principal sources of contamination were confined in a large measure to the various pieces of equipment used in the production of oysters. Use of dilute solutions of formaldehyde was recommended as an effective means for the destruction of the organism.

Before beginning the experimental work in this study, questionnaires were sent to oyster packing houses located in various oyster producing areas to obtain information on the frequency of pink oyster outbreaks and methods used in the handling operations. The data obtained from these questionnaires indicated that the pink yeast-like fungus isolated by Hunter was again responsible for the reported outbreaks. However, in order to definitely establish that this organism was the causative agent, a field laboratory was established in an area where outbreaks were recently reported and an effort was made to isolate the organism. The organism, as far as can be determined by a search of literature, is not toxic to human beings.

Prevalence of the "Pink" Yeast in Oyster Houses

Bacteriological samples were taken from the various pieces of equipment used in the production of oysters and from packages of oysters showing a pronounced pink color. Pink yeast-like forms were found to be present on this equipment and in the pink oysters. Microscopically and culturally, the "yeast" cultures isolated in this study were similar to those that were described by Hunter. Table 1 shows the extent to which the pink yeast was present on some of the equipment used in the production of oysters. It is notable that the yeast appeared in great numbers on equipment on which mud had been allowed to dry. Wet equipment showed fewer yeast cells. Other places in which the yeast was found in considerable numbers included the air in packing rooms, air in shucking rooms, air in storage rooms, dust accumulations on rafters, ceilings and window frames, soil outside the plant, and mud under the planking of boat decks.

Several plant operators were of the opinion that the pink yeast has its origin in the mud and water in which the oysters are grown. Evidence collected in this study indicates that this is not the case, since a high percentage of the samples of water and mud that were examined gave a negative test for the pink organism. It is our belief that the organism is air-borne, since it can readily be found in the air, in dust accumulations, and in dry mud.

Incidence of Pink Yeast in Freshly Shucked Oysters

In order to determine whether the yeast was present in freshly shucked oysters and to obtain data on the incidence of pink oysters in various places, samples of oysters were obtained from areas ranging from New England to the Gulf of Mexico. A total of twenty samples were examined. In no case had the oysters been more than three days out of water upon receipt at the laboratory. The oysters were sampled upon arrival and after various storage intervals. Conditions of storage were such that the temperature never exceeded 3°C. (37.4°F.). Four out of the twenty samples under examination contained the pink yeast, in sufficient numbers to be detected by the method used, immediately upon arrival at the laboratory. The number of positive samples increased to 6 after a period of 8 to 10 days; 8 after a period of 11 to 18 days; and 20 (100 percent) after 19 to 30 days. The pink color was not pronounced in the oyster liquor until after the 18th day of storage. These results indicate that the pink yeast may be present in freshly shucked stock, although discoloration of the oysters does not occur until later. The yeast ultimately multiplies to such an extent that the pigment present in the yeast cells imparts a pink color to the oysters. The length

Note: The authors wish to thank Dr. R. J. Reedy of the Fish and Wildlife Service for the assistance rendered in establishing the field laboratory in which some of these studies were conducted.

of time the oysters have been out of water, even when they have been properly refrigerated prior to shipment, undoubtedly plays a significant role in the pink discoloration of shucked oyster stock.

Killing the Pink Yeast with Heat

Having determined that the pink yeast is responsible for the discoloration of oysters, it was felt that experiments dealing with the effect of various physical and chemical agents on pure cultures of the organism might yield information which would prove useful in control measures to be used in eliminating the organism from equipment in oyster houses. Accordingly, several pure cultures were treated with heat in order to determine their temperature tolerance range. Temperatures ranging from 45° to 80°C. (113° to 175°F.) were used. The results indicate that liquid cultures of the organism could effectively be killed in 10 minutes at a temperature of 50° to 55°C. (112° to 131°F.).

Table 1. Occurrence of Pink Yeast in Oyster Shucking Houses

Source	Number of pink yeast cells present*						Remarks
Unloading buckets	1 3,000	2 11,000	3 62,000	4 60,000	5 16,000	6 5,000	1, 2, 6 wet mud, in use; 3, 4, 5 dry mud, not used.
Wheelbarrows	1 9,000	2 1,000	3 2,000	4 16,000			1, 2, muddy wet; 3, 4 not muddy wet, in use.
Shovels	1 3,000	2 2,000	3 5,000	4 500	5 5,000		All wet, in use.
Storage bins Wall Floor	1 500 68,000	2 0 1,000					1, muddy, wet; 2, washed, clean 1, dry mud; 2, wet mud.
Shucking blocks (Top sides)	1 3,000	2 13,000	3 3,000				1, 3, muddy, wet; 2, dry mud.
Shucking benches	1 2,500	2 9,500	3 2,000	4 8,000			1, 2, 3, muddy, wet; 4, dry mud.
Shucking knives	1 0	2 3,500	3 4,000				1, after dipping in water; 2, 3, during shucking.
Wash water	1 170,000/cc.						During washing of oysters.
Drainboard	1 25,000	2 62,000					In use.
Shipping cans (Inside surfaces)	1 3,000	2 250					Dusty inside.
Shipping barrels (Inside)	1 30,000	2 1,000	3 18,000				1, dry mud;2, new clean; 3, dusty.
Crushed ice Top of pile Center of pile	 14,000/cc. 0/cc.						

* Per square foot of surface unless indicated otherwise.

The Effect of Low Temperatures on the Growth of the Pink Yeast

It has been shown that oysters stored at temperatures approximating 3°C. (37.4°F.) will become pink after a certain storage period. Previous experiments also indicate that yeast cells are capable of multiplication at this storage temperature. Additional data on the effect of low temperatures on the growth rate of pure cultures of the yeast were desired since information relative to the retardation of the growth rate would permit the recommendation of the proper temperatures at which oysters should be stored. Known quantities of the yeast culture were inoculated into a medium favorable for growth. Tubes containing the cultures were stored at several temperatures. The results (Table 2) indicate that the yeast can be retarded by storage at temperatures in the region of 0° to 1°C. (32.0° to 33.8°F.). It is believed that storage of oysters suspected of containing the pink yeast at this temperature will avoid or delay discoloration.

Table 2. Storage Temperatures and the Growth of Pink Yeast

Storage Temperature		Number of yeast cells per cc.		
Centigrade	Fahrenheit	Previous to storage	After 2 days' storage	After 5 days' storage
25° C.	77.0° F.	19	3,300,000	13,000,000
7.5° C.	45.5° F.	19	550	280,000
0.0° C. to 1° C.	32.0° to 33.8° F.	19	47	0

The Effect of Temperature Fluctuation on the Quality of Oysters

Experiments showed that multiplication of the pink yeast could be retarded by low temperatures. Consequently, an experiment was designed to determine the effect of fluctuating storage temperatures on the growth of the pink yeast in shucked oysters. Two samples of freshly shucked oysters of identical lot were stored for periods of one day at each of several different temperatures. Bacteriological, chemical, and organoleptic tests were made after each period of storage. When the oysters were received at the laboratory, they were found to be in excellent condition. Initial tests for the pink yeast on one sample were negative; on the other, positive. After storage for one day at 10° C. (50° F.), the initial pH (hydrogen-ion concentration) of the oysters dropped from 6.5 to 6.0 and both samples were positive for the pink yeast. On the second day, the samples were stored at 25° C. (77° F.). The pH after this storage period dropped from 6.0 to 5.0. A decidedly sour odor was noted, the oyster liquor had a pronounced pink color, and the pink yeast content of the two samples averaged 12.5 percent of the total number of bacteria present. On the third day the samples were stored at 1° C. (33.8° F.). At the end of this time the pink yeast content was approximately 15 percent of the total number of bacteria present. Thus it can be seen that when the storage temperature was allowed to rise, the oysters spoiled rapidly with an increase in the pink yeast content, turning the oysters pink. After the oysters were spoiled, the pink color remained and the yeast cells could not be reduced in numbers by lowering the storage temperature.

Germicidal Efficiency of Certain Chemicals in Destroying the Pink Yeast

Formalin at a 1 to 1,000 dilution in tap water is being used for disinfecting equipment in oyster houses to destroy the pink yeast. It is generally believed that a solution at this strength will either entirely destroy or materially reduce in number the pink organisms present on oyster shucking equipment, thus either totally eliminating the organisms from the packaged shucked oysters or reducing them in number so that the appearance of the pink color is greatly delayed.

Experiments conducted in the field led us to believe that formalin when diluted with tap water to the dilution mentioned above was only slightly effective in destroying the pink yeast. Our belief was confirmed to some extent by oyster packers who contended that pink oyster outbreaks occurred even when the utmost care was taken in disinfecting the equipment with formalin at this dilution. Tests with pure cultures of the pink yeast in the laboratory further confirmed this belief. As a result of these findings additional work was undertaken on the effect of formalin and other chemicals at lower dilutions than formerly, as agents for destruction of the pink yeast.

The pink yeast appeared to be extremely resistant to the majority of the chemicals tested. Crotonaldehyde, benzaldehyde, hexabromostearate, furfural, hydroquinone, and chlorine exhibited some destructive effect after being in contact with pink yeast cells for a period of one-half hour. In each of the instances in which the chemical tested was found to be effective, it was used in a strong solution. Chlorine, a favorite chemical in the sterilization of food products, proved to be relatively ineffective, since a solution containing 2,500 parts per million available chlorine was required to destroy the yeast. Chemicals tested and found to be destructive to the pink yeast, with the exception of formalin, cannot be recommended when judged from the standpoint of cost of chemical as opposed to effectiveness in destroying the yeast, or from the possibility of toxicity to humans.

Since formalin is used at the present time and since the cost of this chemical is low when compared to other chemicals tested, it was felt that additional studies with formalin were warranted. These studies were aimed at (1) determining what strength of formalin solution would kill the organism and (2) altering the pH (hydrogen-ion concentration) of the dilution of formalin that was found to be effective to determine if an increase in killing power could be obtained. In some preliminary studies on the effect of varying the pH of solutions on the growth rate of the pink yeast, it was found that solutions within the range pH 3.3 to 4.7 had a marked inhibitory effect. Therefore, an experiment dealing with the effect of various dilutions of formalin at various pH levels was conducted. Table 3 shows the effect of the pH on the germicidal efficiency of three dilutions of formalin. From this it can be seen that as the pH value drops the efficiency of the formalin increases. To determine to what extent the pH affects the efficiency of formalin, an additional experiment was carried out. The effectiveness of several dilutions of formalin at a pH of 3.1 was compared to dilutions of formalin in ordinary tap water with a pH of 6.8. A pH of 3.1 in tap water was obtained by the addition of acetic acid. The comparative effectiveness of various dilutions of formalin in these two media are shown in Table 4. A 1-100 dilution of formalin was required to destroy in five minutes a pink yeast culture in tap water of normal pH. This is ten times the strength of formalin that is being used at the present time for disinfecting the equipment in oyster houses.

Table 3. Relation of pH to the Germicidal Efficiency of Formalin*

pH	Dilution of formalin		
	1 - 300	1 - 500	1 - 1000
8.3	+	+	+
7.2	+	+	+
6.2	-	+	+
5.1	-	-	+
4.3	-	-	+
3.3	-	-	+

\- Yeast culture destroyed.
\+ Yeast culture not destroyed.
* Time of action - 5 min.
(Tap water control (pH 7.0)+).

Table 4. Comparison of Germicidal Effect of Formalin in Normal Tap Water with Formalin in 0.3 Percent Acetic Acid*

Dilution	Formalin in tap water (pH 6.8)	Formalin in 0.3 percent acetic acid (pH 3.1)
1 - 100	-	-
1 - 300	+	-
1 - 500	+	-
1 - 1000	+	+
1 - 1500	+	+

\- Yeast culture destroyed.
\+ Yeast culture not destroyed.
* Time of action - 5 min.
(Tap water control (pH 6.8) and 0.3 percent acetic acid control +).

By lowering the pH of the formalin solution to 3.1 with acetic acid, the efficiency of the formalin was increased fivefold. Formalin, therefore, can be used effectively if diluted to a strength of 1 - 500 in a 0.3 percent acetic acid solution. Cost of chemicals for this new treatment is greater than that of formalin treatments previously employed. However, the cost should not make the treatment prohibitive since the solution to be used costs about one cent a gallon. This estimate is made on the basis that concentrated formalin (40 percent formaldehyde) and 28 percent acetic acid can be obtained at a cost of 10 cents per pound. On this same basis, the cost of chemicals for the entire season would be in the region of $70.00 for the largest oyster houses and about $35.00 for the average plant. About 100 pounds of formalin and 500 pounds of 28 percent acetic acid would be required for the larger houses. This should allow for a disinfection of the equipment three times weekly.

Recommendations for Eliminating Pink Oyster Outbreaks

In view of the results obtained in these studies, it is believed that pink discoloration of oysters can be eliminated if the following simple precautionary measures are taken:

1. Destroy pink yeast on equipment. This can be accomplished by spraying equipment such as unloading buckets, wheelbarrows, shovels, storage bins, buckets, benches, walls, ceilings, floors, rafters, etc., with a 1 - 500 dilution of formalin (40 percent formaldehyde) in a 0.3 percent solution of acetic acid. The solution is prepared as follows:

> A quart of formalin and 5 quarts of 28 percent acetic acid mixed with 125 gallons of water, or if larger or smaller quantities are desired, mix in the proportion of 1 part formalin, 5 parts 28 percent acetic acid, and 500 parts of water.

All equipment should be scrubbed with water to remove dry mud and organic matter prior to use. IF THE RAW FORMALIN OR ACETIC ACID (28 PERCENT) TOUCHES THE HANDS, WATER SHOULD BE QUICKLY USED TO REMOVE THE CHEMICALS, OTHERWISE SERIOUS BURNS WILL OCCUR. The dilute solution is not harmful. It is recommended that the entire plant be disinfected three times weekly at the end of the day's operations. When applying the solution it is best to start at one end of the plant and work toward the other end, trying not to walk back and forth over places already treated. A suitable way is to work from both receiving and shipping ends of the plant toward the source of water supply.

2. Maintain proper storage temperatures for oysters. Suitable storage temperatures should be carefully maintained at the plant, during shipment, and during storage in retail establishments. The best temperature for storage of oysters is in the range from 1° to 3° C. (33.8° to 37.4° F.). It should not at any time exceed 5° C. (41° F.).

3. Do not hold oysters in storage any longer than necessary. Production should be regulated to avoid long periods of storage. Stock sold locally should not be held in storage more than five days. To facilitate keeping a record of the age of oysters cans should be code-dated.

4. Speed up the time of handling and distribution. Make smaller shipments if necessary and caution the buyer not to overstock so that he can get his supplies into consuming channels before trouble may be expected to appear.

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GOVERNMENT WANTS FISHERY MARKETING SPECIALISTS

The Civil Service Commission has announced that applications are now being received for fishery marketing positions with the Fish and Wildlife Service. All eligible persons are urged to apply.

Positions to be filled are in several grades with salaries ranging from $2,000 to $4,600 a year.

Applications must be on file with the Commission in Washington, D. C., not later than June 12, 1941. Persons interested should obtain announcement sheets and application blanks from the U. S. Civil Service Commission, Washington, D. C.

GOVERNMENT DISCUSSES NATION'S ABILITY TO MEET ITS FOOD REQUIREMENTS

The Consumer Division of the Office of Emergency Management has released (April 7) the following summary of the nation's ability to meet demands for food in the near future:

"On the whole, the nation's production of food is more than adequate to meet existing demands in most commodities. For certain foods we have large surpluses which have resulted

in part from the cutting off or curtailment of foreign markets which in the past have taken large quantities of the products of our farms. The family food budget cost a little more in February than in January. On the average, food costs are now almost 5 percent above those of August 1939, just prior to the beginning of the war, but still below the average for the five pre-defense years, 1935-39.

"Should it become necessary to send large quantities of food to Great Britain, consumers must be prepared to make some sacrifices. These sacrifices may come either in the form of some price increases or in the adjusting of consumption by the buying of substitutes. The complete answer cannot be given until the extent of British needs are known."

This office also describes conditions affecting the prices of meat:

"Although meat prices were unusually high in February, quotations were still under the figures for last September. Referring back to August 1939, again, it develops that prices as of the middle of February were 5 percent above those of the pre-war date.

"As more people go back to work their purchases of meat increase. The question obviously is whether the supply of beef on farms and ranches is keeping up with this increased demand. The facts show that the number of cattle on the farms has been increasing. But because beef prices have been rising and because of the belief of farmers that they will continue to rise, they have been holding increased numbers of cattle for breeding purposes. As a result of this policy, supplies of beef coming to the market now are not much larger than last year even though the demand is greater. Unless more of the cattle on the farms are sold for slaughter, prices of beef may be expected to rise further.

"Pork supplies are low for this season as a whole and as a result the outlook is for higher pork prices. Until the time necessary for breeding and raising more hogs has elapsed, it is likely that prices will remain very firm. The solution of the problem of high meat prices requires an increase in the supply available to meet consumer needs. The Consumer Division is in full accord with the recent advice of the Secretary of Agriculture to farmers to increase hog production and the slaughter of cattle. As a further step in increasing supplies, the Division has recommended that the corn loan program of the Department of Agriculture be modified to reduce the cost to farmers of feeding hogs and cattle for slaughter."

LABOR DEPARTMENT REPORTS INCREASES IN COSTS OF LIVING

The following statement is quoted from a recent release issued by the U. S. Department of Labor:

"Increases in the prices of many kinds of goods and of some services caused living costs in large cities of the country to rise four-tenths of one percent between mid-February and mid-March, Secretary of Labor Perkins reported today (Saturday). As a result of this advance, the living costs of moderate-income families in March were 2.6 percent higher than in August 1939, the month before war started in Europe.

'"Prices to consumers generally are beginning to show the effects of the broad increases which have occurred in wholesale markets since last summer, particularly for foods, textiles, and all kinds of housefurnishings,"' she said. '"Following the end of the clearance sales held in January and February, clothing prices rose sharply to levels higher than those reported before the sales began. Cost of food which has been advancing since November, continued to move higher. Rents are higher than last December in almost all large cities, and there are reports of further raises on April 1, the moving date in a number of cities.

'"In view of recent increases in wholesale prices of clothing and housefurnishings intended for fall delivery, and probable increases in food prices and in rents, it is anticipated that the cost of living will advance as much as 3 percent more between March and the early autumn."'

CAMPAIGN TO SELL FISH ON TUESDAYS IS LAUNCHED IN NEW YORK CITY

The Commissioner of Markets of New York City has recently begun an effort to increase sales of fish in the New York area and to make more orderly the movements of fishery products through that city's wholesale and retail channels. Limited demand for fish during the early part of the week has long been recognized as detrimental to the best interests of the fishery industries and conducive to uneconomic use of all facilities employed in the distribution and selling of fish. The current campaign is actively suggesting the consumption of fish on Tuesdays.

WILLIAM AND MARY COLLEGE ANNOUNCES ESTABLISHMENT OF LABORATORY FOR FISHERY WORK

William and Mary College, at Williamsburg, Virginia, has issued announcements of establishment of a fishery laboratory. The announcement reads in part as follows:

"With the object of conserving and developing the aquatic resources of Virginia, the Virginia Fisheries Laboratory was established in 1940 under authority of the General Assembly. Funds were appropriated for this work, in part through the Virginia Commission of Fisheries and in part through the College of William and Mary. A program of research and instruction in Aquatic Biology and conservation is carried on by the Laboratory in cooperation with the College. Field studies are centered at the laboratory in Yorktown; teaching work is conducted in Williamsburg; and experimental work is carried on in both locations. The United States Fish and Wildlife Service cooperates in the program.

"The Virginia Fisheries Laboratory functions as a service institution aiming to contribute information that will directly assist the commercial fisheries of tidewater Virginia. To this end, the Laboratory conducts biological surveys of the quantity and the distribution of certain forms that compose our more important tidewater fisheries. These organisms are further studied to determine the best way in which they may be cultivated and utilized by industry. Animals whose life histories are unknown or only partly understood are receiving immediate attention to provide a fundamental basis for scientific fishery management.

"The Laboratory also aims to measure the environmental factors affecting distribution and fluctuations in abundance of important economic forms recognizing that nature as well as man, affects the potential yield of a fishery. Physical, chemical and biological conditions are studied in relation to the productivity of the waters of the region.

"A third objective of the program is to raise the general level of understanding and appreciation of seafood products, to provide a source of information through laboratory and field study that will constitute a basis for the cultivation and wise-utilization of aquatic resources, and lastly, to train students in those fundamental and applied phases of biology that will enable them to continue this program."

SOLUTION SOUGHT FOR DAMAGE TO SHRIMP TRAWLS BY PORPOISES

On March 20, 1941, a group of fishermen from the Barataria Bay region in Louisiana held a meeting to determine an approach to problems arrising from the destruction of shrimp catches by porpoises. Fishermen claim that during the past few years porpoises have become practiced at biting open the bag end of shrimp trawls during fishing operations. This has occurred to an extent sufficient to be recognized by the fishermen as a serious menace to their livelihood. A number of suggestions were made during the meeting and it was agreed to make experiments on variations in gear and to enlist the support of the State conservation department in studying the situation.

It is understood that experiments are being carried on to determine the possibility of utilizing porpoises commercially, thereby providing an incentive for development of a fishery which will relieve the destruction of shrimp indirectly.

KETCHIKAN AND JUNEAU GET MARKET NEWS BROADCASTS

On May 3, radio station KGBU at Ketchikan, Alaska, began daily broadcasts of fishery market information furnished by the Fish and Wildlife Service. Each evening, except Sunday, at 9 P.M. and at midnight, a summary of halibut and troll salmon receipts and prices at Juneau, Petersburg, Sitka, and Ketchikan is being broadcast. Data on daily sales and prices of salmon sold over the Seattle Salmon Exchange are included in the nightly programs.

A similar Market News Service broadcast also has been begun from station KINY at Juneau, Alaska.

WHOLESALE AND RETAIL PRICES

United States wholesale commodity prices continued their gradual rise through May 3, according to figures of the Bureau of Labor Statistics. The average all-commodity index, as determined from nearly 900 price series, rose 1.2 percent between April 5 and May 3, reaching on the latter date a point figuring 83.2 percent of the 1926 average. The May 3 average was 5.4 percent higher than the May 4, 1940, figure. Food costs stood at 78.0 percent of the 1926 average on May 3, a point 1.7 percent above the April 5 figure, and 7.6 percent higher than that of May 4, 1940.

Retail prices for foods also displayed advances, according to the Bureau of Labor Statistics. During the month ending April 15, food prices rose 2.2 percent in a general movement in all sections of the country as reflected in reports from 51 cities. On April 15 retail food prices stood 4½ percent higher than a year earlier and six tenths of a percent above the 5-year average 1935-39.

The price of red salmon at retail per 16-ounce can averaged 27.2 cents on April 15 and pink salmon sold for an average of 16.5 cents per can. These prices represented rises of 1.1 percent and 1.9 percent above March 18 figures and of 6.2 percent and 7.1 percent above the averages of April 16, 1940.

FISHERIES OF MASSACHUSETTS

One of the Fish and Wildlife Service marketing agents in the New England area reports that the southern mackerel seining fleet operating out of Gloucester is the smallest in many years. Only six vessels had left Gloucester by the first of April for fishing in the vicinity of Cape May. The major part of the fleet occupied in this fishery in the past is now engaged in fishing for redfish as this activity has recently grown to be regarded as a fairly reliable source of profit. Reports from Essex County indicate that many clam diggers are now reporting for activity in defense industries, particularly in shipyards, resulting in a shortage of diggers. For this reason wholesalers have become apprehensive as to whether the supply of clams in the future will be sufficient to meet requirements. Seed clams are reported to be present in greater abundance than in many years in Essex County flats.

OFFSHORE VESSELS INCREASE LANDINGS AT BOSTON

Vessels fishing in offshore areas landed increased quantities of fish at Boston during March, the March report of the Boston Market News Service office discloses. Landings of these vessels were 20 percent and 46 percent greater, respectively, than those of February 1941 and March 1940. Sales of fish from offshore and inshore areas combined grossed $1,013,000 to the fishermen.

Enlarged cod and haddock receipts were chiefly responsible for the increase in offshore landings.

Landings and Prices of Fishery Products at Boston

Item	March 1941		Change from Feb. 1941		Change from Mar. 1940		Landings 3 months 1941	Landings 3 months 1940
	Landings	Av. price (cwt)	Landings	Av. price	Landings	Av. price		
	Lbs.	$	%	%	%	%	Lbs.	Lbs.
Offshore vessels	24,130,000	3.83	+ 20	- 4	+ 46	-14	59,211,000	57,396,000
Inshore craft	2,393,000	3.62	0	0	+ 30	- 3	6,099,000	3,744,000
Total	26,523,000	3.82	+ 18	- 3	+ 44	-12	65,310,000	61,140,000
Leading items:								
Offshore								
Cod, large	5,545,000	3.31	+ 36	- 7	+ 73	-21	11,317,000	8,136,000
Cod, market	2,677,000	3.54	+ 62	-15	+ 80	-17	5,471,000	4,985,000
Cusk	312,000	3.58	- 7	+17	+ 56	- 7	935,000	889,000
Gray sole	115,000	5.34	+102	+18	- 45	+45	616,000	1,899,000
Haddock	8,225,000	4.37	+ 26	- 7	+ 21	- 9	19,520,000	19,209,000
Haddock, scrod	4,743,000	3.43	+ 11	- 2	+105	-18	12,089,000	8,599,000
Pollock	1,185,000	3.17	- 29	+18	+ 12	- 7	4,327,000	5,220,000
Rosefish	886,000	2.92	- 11	+ 1	+ 12	+84	3,315,000	6,433,000
Inshore								
Cod, large	167,000	4.20	+ 27	- 8	- 1	-25	391,000	388,000
Cod, market	292,000	4.03	+ 15	- 6	+ 42	-27	763,000	574,000
Dabs	52,000	3.99	- 9	+23	- 78	+33	144,000	411,000
Gray sole	141,000	5.85	- 15	- 1	- 60	+19	416,000	601,000
Haddock	100,000	5.82	- 9	+ 5	+100	-24	270,000	83,000
Rosefish	1,448,000	2.94	+ 4	+ 2	+188	+79	3,293,000	808,000
Yellowtails	45,000	4.16	- 65	+36	- 78	+39	373,000	523,000

CHICAGO SALT-WATER FISH RECEIPTS RISE

A decrease in the receipts of fresh-water fish at the Chicago Wholesale Market in March as compared with February was offset by large arrivals of salt-water species during the month. The monthly report of receipts issued by the Chicago office of the Fishery Market News Service disclosed that salt-water fish contributions were 50 percent greater than in February and 87 percent higher than in March 1940. Among the receipts were 74 classifications of fishery products, 29 each of salt-water and fresh-water fish and 16 of shellfish and miscellaneous items.

Both fresh-water and salt-water fish have been received in increased quantities during the first three months of 1941 as compared with the January-March 1940 period.

Receipt of Fishery Products at Chicago

Item	March 1941	Mar. 1941 compared with Feb. 1941	Mar. 1941 compared with Mar. 1940	3 months Jan. - Mar. 1941	3 mo. 1941 compared with 3 mo. 1940
Classification:	Pounds	Percent	Percent	Pounds	Percent
Fresh-water fish	3,467,000	- 6	+12	10,540,000	+ 27
Salt-water fish	2,273,000	+ 50	+87	4,897,000	+ 28
Shellfish, etc.	501,000	- 25	-32	2,168,000	- 1
Total receipts	6,241,000	+ 6	+24	17,605,000	+ 23
Leading items:*					
Buffalofish	256,000	+117	+327	505,000	+263
Carp	223,000	+140	+ 63	538,000	+ 32
Lake trout	443,000	+ 47	+ 31	1,154,000	+ 23
Sauger	1,088,000	- 9	+ 12	3,155,000	+ 49

Receipts of Fishery Products at Chicago - Continued

Item	March 1941	Mar. 1941 compared with Feb. 1941	Mar. 1941 compared with Mar. 1940	3 months Jan. - Mar. 1941	3 mo. 1941 compared with 3 mo. 1940
Leading items (continued):*	Pounds	Percent	Percent	Pounds	Percent
Smelt	406,000	+ 57	- 6	775,000	- 1
Whitefish	224,000	- 60	- 45	1,205,000	- 18
Halibut	861,000	+ 1	+ 80	2,147,000	+ 23
Rosefish fillets	319,000	+ 60	- 4	745,000	- 27
Silver salmon	319,000	+232	+929	440,000	+389
Shrimp	129,000	- 68	- 74	287,000	+116
Leading sources:					
Manitoba	1,315,000	- 26	+ 17	4,421,000	+ 46
British Columbia	1,074,000	+ 88	+115	2,074,000	+ 21
Wisconsin	903,000	+ 34	+ 8	2,038,000	+ 11
Massachusetts	680,000	+ 63	+ 18	1,577,000	+ 1
Domestic total	3,540,000	+ 19	+ 16	9,799,000	+ 20
Imported total	2,701,000	- 7	+ 36	7,806,000	+ 27
Transported by:					
Truck	2,303,000	+ 28	+ 24	6,025,000	+ 36
Express	891,000	+ 21	- 3	2,432,000	- 25
Freight	3,047,000	- 9	+ 35	9,148,000	+ 37

* Includes fresh and frozen fish.

SEVEN FISHERY COOPERATIVES INCORPORATED IN NEW BRUNSWICK IN 1939

Extensive activity of cooperative associations in New Brunswick is indicated by the number of these organizations functioning in this Province. The Maritime Co-operator of Antigonish, Nova Scotia, lists the following fishery cooperatives that were incorporated in New Brunswick in 1939: Miramichi Co-operative Fisheries, Limited; Neguac Fishermen's Cooperative, Limited; Portage River Fishermen's Co-operative, Limited; Richibucto Village Fishermen's Co-operative, Limited; La Cooperative des Pecheurs de la Baie de Cocagne, Limitee; La Cooperative des Pecheurs de Grand' Digue, Limitee; and L'Association des Pecheurs de Pigeon Hill, Limitee.

MEXICO ISSUES DECREES RESERVING CERTAIN FISHERY RESOURCES FOR COOPERATIVE ACTIVITIES

On October 25, 1940, President Cardenas of Mexico signed executive decrees providing that only cooperatives may exploit the fishing for clams and sharks in Mexican territorial waters. These decrees were issued after studies made by the Bureau of Fishing and Maritime Industries had determined that the fishermen operating in these fisheries obtained scanty returns because "they undertake development in an isolated manner". The purpose of the decrees was to improve the economic condition of the fishermen through "national exploitation" for which purpose it was considered necessary for them to form collective groups to exploit the resources. The decrees state specifically that the exploitation of all species of clams and sharks in Mexican maritime waters is reserved to the regional fishermen legally organized in cooperative societies or those cooperative groups which may be formed in the future. The decrees became effective November 25, 1940.

MEXICAN REGULATIONS BROUGHT TO ATTENTION OF UNITED STATES FISHERMEN

At the suggestion of the Department of State and based upon that Department's information, the Fish and Wildlife Service recently issued a notice for attention of all United States fishermen operating under Mexican fishing permits. The suggestion followed the impo-

sition of a sizeable fine by Mexican authorities upon an American fishing vessel for violation of Mexican regulations.

The notice advises American fishermen to keep all trips under Mexican license within the 70-day limit from date of sailing to date of return as prescribed in Article X of the Mexican Fishing Regulations.

FROZEN FISH TRADE

Frozen Fish Holdings Decline 29 Percent

The holdings of frozen fishery products in the cold-storage plants of the United States and Alaska on April 15 were 29 percent smaller than those of a month earlier. All major items except rosefish fillets contributed to the decrease. Rosefish fillet stocks, gaining 117 percent in the month, were yet 17 percent smaller than those of April 15, 1940.

Holdings of Fishery Products in United States 1/

Item	Apr. 15 1941	Apr. 15 compared with Mar. 15 1941	Apr. 15 compared with Apr. 15 1940	Apr. 15 compared with 5-yr. av. Apr. 15	Mar. 15 1941	Apr. 15 1940	5-yr. av. Apr. 15
	Pounds	Percent	Percent	Percent	Pounds	Pounds	Pounds
Frozen fish and shellfish:							
Total holdings	35,568,000	- 29	+ 2	+ 4	49,805,000	34,835,000	34,302,000
Important items:							
Fillets:							
Cod	1,193,000	- 11	+156	(2)	1,340,000	466,000	(2)
Haddock	2,289,000	- 15	+114	-25	2,701,000	1,071,000	3,063,000
Pollock	1,917,000	- 41	+ 7	(2)	3,231,000	1,794,000	(2)
Rosefish	1,200,000	+117	- 17	(2)	552,000	1,450,000	(2)
Halibut	2,367,000	- 33	+115	+42	3,547,000	1,102,000	1,669,000
Sablefish	1,197,000	- 20	- 8	+46	1,503,000	1,304,000	822,000
Salmon	3,383,000	- 24	+ 50	+ 6	4,439,000	2,256,000	3,201,000
Smelts	1,745,000	- 19	+ 42	+57	2,161,000	1,233,000	1,112,000
Whiting	1,205,000	- 62	- 52	-61	3,199,000	2,536,000	3,117,000
Whitefish	1,450,000	- 23	- 15	+11	1,894,000	1,701,000	1,310,000
Shrimp	1,452,000	- 54	- 32	(2)	3,182,000	2,125,000	(2)
Cured fish:							
Herring, cured	16,462,000	+ 22	+ 5	+ 8	13,542,000	15,753,000	15,304,000
Salmon, mild-cured	2,339,000	- 16	- 52	-38	2,775,000	4,923,000	3,802,000

1/ Statistics furnished by the Agricultural Marketing Service, Department of Agriculture.
2/ Data not available.

Only 8,327,000 pounds of fishery products were frozen in the month ending April 15. This total reflected greater freezing activity than is normal for this time of year, however. Freezing of fillets of rosefish, haddock, and cod was unusually active.

Freezings of Fishery Products in United States Cold-storage Plants 1/
(Figures are for the month ending on the date indicated)

Item	Apr. 15 1941	Apr. 15 compared with Mar. 15 1941	Apr. 15 compared with Apr. 15 1940	Apr. 15 compared with 5-yr. av. Apr. 15	Mar. 15 1941	Apr. 15 1940	5-yr.av. Mar. 15
	Pounds	Percent	Percent	Percent	Pounds	Pounds	Pounds
Total fish and shellfish	8,327,000	+43	+ 47	+ 8	5,838,000	5,664,000	7,746,000
Important items:							
Cod fillets	1,680,000	+39	+178	+17	1,207,000	605,000	2,023,000

Freezings of Fishery Products in United States Cold-storage Plants - Continued 1/
(Figures are for the month ending on the date indicated)

Item	Apr. 15 1941	Apr. 15 compared with Mar. 15 1941	Apr. 15 compared with Apr. 15 1940	Apr. 15 compared with 5-yr. av. Apr. 15	Mar. 15 1941	Apr. 15 1940	5-yr. av. Mar. 15
Important items (continued):	Pounds	Percent	Percent	Percent	Pounds	Pounds	Pounds
Haddock fillets	1,680,000	+ 39	+178	-17	1,207,000	605,000	2,023,000
Rosefish fillets	2,595,000	+ 68	+363	(2)	1,543,000	561,000	(2)
Halibut	275,000	(2)	- 54	-64	--	604,000	765,000
Smelts	203,000	+167	- 47	- 1	76,000	385,000	204,000
Shrimp	372,000	+ 26	- 35	(2)	295,000	573,000	(2)

1/ Statistics furnished by the Agricultural Marketing Service, Department of Agriculture.
2/ Data not available.

Boston Holdings Drop Despite Large Increase in Cod and Haddock Fillet Stocks

Reports issued by the Boston office of the Fishery Market News Service show that stocks of cod and haddock fillets in Boston cold-storage plants increased by 1,100,000 pounds in the five weeks ending April 30. Despite this increase, the total holdings fell 7 percent during the period. Holdings of pollock fillets, mackerel, and smelt experienced large withdrawals.

Boston Cold-storage Holdings

Item	Apr. 30, 1941	Apr. 30 compared with Mar. 26, 1941	Apr. 30 compared with Apr. 24, 1940	Mar. 26, 1941	Apr. 24, 1940
	Pounds	Percent	Percent	Pounds	Pounds
Total fish and shellfish	6,267,000	- 7	+ 68	6,743,000	3,737,000
Leading items:					
Fillets:					
Cod	672,000	+ 72	+1539	390,000	41,000
Haddock	1,727,000	+ 91	+ 747	904,000	204,000
Pollock	992,000	- 30	+ 32	1,425,000	752,000
Rosefish	165,000	+166	0	62,000	165,000
Mackerel	207,000	- 74	- 68	786,000	653,000
Smelt	878,000	- 20	+ 68	1,092,000	524,000
Shrimp	27,000	- 76	+ 575	112,000	4,000

Shrimp and Whitefish Lead Decline in New York Cold-storage Stocks

On the last Thursday in April the stocks of fishery products in cold-storage plants in New York City totaled 4,560,000 pounds, according to the New York office of the Fishery Market News Service. This was one-fifth smaller than the holdings of four weeks earlier. The drop was largely due to lowered holdings of whitefish and shrimp.

New York Cold-storage Holdings

Item	Apr. 24, 1941	Apr. 24 compared with		Mar. 27, 1941	Apr. 25, 1940
		Mar. 27, 1941	Apr. 25, 1940		
	Pounds	Percent	Percent	Pounds	Pounds
Total fish and shellfish	4,560,000	-20	- 2	5,673,000	4,651,000
Leading items:					
Butterfish	215,000	- 3	- 20	221,000	268,000
Halibut	179,000	+ 8	+397	165,000	36,000
Herring, sea and sardine	176,000	-10	+175	196,000	64,000
Sablefish	154,000	-16	- 14	183,000	179,000
King salmon	445,000	+ 1	+ 82	441,000	245,000
Silver salmon	151,000	+18	- 17	128,000	182,000
Shad	203,000	+22	- 22	167,000	259,000
Sturgeon	405,000	- 9	- 39	444,000	665,000
Whitefish	737,000	-28	- 7	1,030,000	792,000
Lobster tails, spiny	201,000	-29	- 1	282,000	202,000
Shrimp	61,000	-82	0	332,000	61,000

Chicago Holdings Experience General Decline in April

The holdings of fishery products in Chicago cold-storage establishments, as reported by the office of the Fishery Market News Service in that city, dropped 29 percent in the four weeks ending April 24. All major stocks were reduced--blue pike and sauger and shrimp showing the major drops. The total stock was 25 percent larger than that of a year previous, however.

Chicago Cold-storage Holdings

Item	Apr. 24, 1941	Apr. 24 compared with		Mar. 27, 1941	Apr. 25, 1940
		Mar. 27, 1941	Apr. 25, 1940		
	Pounds	Percent	Percent	Pounds	Pounds
Total fish and shellfish	4,138,000	-29	+ 25	5,807,000	3,319,000
Leading items:					
Blue pike and sauger	596,000	-57	- 9	1,370,000	654,000
Lake herring and chubs	433,000	-26	+143	583,000	178,000
Lake trout	154,000	-41	- 48	261,000	298,000
Smelt	218,000	+31	+ 22	166,000	178,000
Whitefish	336,000	-30	- 13	478,000	386,000
Rosefish fillets	109,000	+79	- 52	61,000	225,000
Halibut	423,000	-15	+479	495,000	73,000
Shrimp	114,000	-76	- 25	477,000	152,000

April Shows Drop in Canadian Fish Holdings

Preliminary figures released by the Dominion Bureau of Statistics showed a total of 17,661,000 pounds of frozen fresh fishery products on hand in Canadian cold-storage plants on May 1, 1941. This was 8 percent less than the total of April 1 and 46 percent greater than the May 1, 1940, figure. Of the reported total volume, sea herring was first in importance, with 21 percent, and cod fillets, halibut, and salmon were next in importance with 20 percent, 12 percent, and 12 percent, respectively. The stocks of cod fillets, salmon, and halibut were considerably in excess of the stocks of May 1, 1940.

Also held in Canadian cold-storage plants on May 1, according to the Bureau of Statistics' preliminary figures, were 2,090,000 pounds of frozen smoked fishery products. Groundfish fillets comprised over half of this total, with finnan haddie and sea herring kippers also important.

Canadian freezing activity in April involved 3,967,000 pounds of fresh fishery products, of which at least 1,870,000 pounds were cod fillets and 960,000 pounds were halibut. Haddock fillets and sea herring were also frozen in important quantities. Smoked fishery products totaling 1,727,000 pounds were frozen by Canadian firms in addition. This poundage was composed mainly of groundfish fillets (81 percent) and finnan haddie (18 percent).

CANNED FISH TRADE

Canned Salmon Stocks Become Further Reduced

Unsold stocks of canned salmon remaining in the hands of producers on April 30 were only 78 percent greater than the volume of April sales. Figures compiled by the Association of Pacific Fisheries indicate that the equivalent of 130,000 standard cases were sold during April, leaving only 233,000 cases in packers' hands to cover sales until the 1941 pack is available. The decrease in stocks in April was felt mainly in Alaska reds, pinks, and chums.

Canned Salmon Unsold--Standard Cases

Item	April 30, 1941	March 31, 1941	April 30, 1940
Chinook	42,000	48,000	28,000
Puget Sound sockeye	20,000	27,000	26,000
Alaska red	47,000	84,000	922,000
Silver or coho	31,000	46,000	59,000
Humpback or pink	69,000	111,000	133,000
Chum	20,000	43,000	81,000
Bluebacks and steelheads	4,000	4,000	1,000
Total	233,000	363,000	1,250,000

Shrimp Packing at Standstill in April

There was almost an entire cessation of shrimp canning during April in the forty packing plants included under the Seafood Inspection Service of the U. S. Food and Drug Administration. To May 3 only slightly more than 909,000 standard cases of 48 No. 1 cans of shrimp had been packed for the 1940-41 season.

Wholesale prices for canned shrimp, f.o.b. point of production on May 1, were slightly higher than on April 1, according to packers' quotations published by the New Orleans Market News office. The prices for No. 1 tall tins as reported by Gulf Coast packers, follow:

Canned Shrimp Prices -- Per Dozen Tins

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	Wet Pack		Dry Pack	
	May 1, 1941	May 1, 1940	May 1, 1941	May 1, 1940
Small	$1.20 - $1.30	$1.15 - $1.20	$1.20 - $1.30	$1.15 - $1.20
Medium	1.25 - 1.40	1.20 - 1.25	1.25 - 1.40	1.20 - 1.25
Large	1.35 - 1.45	1.25 - 1.30	1.30 - 1.45	1.25 - 1.30
Extra large or jumbo	1.40 - 1.55	1.30 - 1.35	1.40 - 1.55	1.30 - 1.35

California Sardine Pack Negligible in March

During March only 15,000 cases of California sardines were packed in that State. This brought the 1940-41 season total to 3,116,000 standard cases, according to the California Division of Fish and Game.

California Tuna and Mackerel Packs Lag Behind 1940 Totals

California tuna packers have reported to the State's Division of Fish and Game that 340,000 standard cases of tuna were canned in the first three months of 1941. This is 31 percent less than the pack for the corresponding part of 1940. Of the 1941 pack 22 percent has been canned in the San Pedro district and 78 percent in the San Diego district.

The 1941 pack to March 31 included yellowfin tuna, 219,000 cases; striped tuna, 62,000 cases; tuna flakes, 39,000 cases; bonito, 8,000 cases; and yellowtail, tonno style tuna, and albacore, 12,000 cases.

Canning activity for the three months also included 178,000 cases of mackerel, according to the California Division of Fish and Game. This was a 48 percent drop from the total for January through March 1940.

Note: The tuna pack for the first two months of 1941 reported to the Fishery Market News and published in its April issue was in error. The pack for these months totaled 228,000 cases instead of the 598,000 cases reported. The pack of tuna flakes should have read 4,000 cases instead of 402,000 cases.

FOREIGN FISHERY TRADE

Canned Salmon Exports Lowest in Four Years

In March the exports of canned salmon from the United States fell to their lowest volume since June 1937. A main contributing factor in this reduction was the lack of stock in the hands of packers. Other main items of export among edible fishery products were also low. Total export volume in March was 70 percent below that of February and 60 percent less than that of March 1940.

United States Exports of Edible Fishery Products 1/

Item	March 1941	March 1940	Three months ending with March 1941	Three months ending with March 1940
	Pounds	Pounds	Pounds	Pounds
Salmon, canned	562,000	1,000,000	12,507,000	10,539,000
Sardines, canned	3,060,000	9,660,000	14,154,000	31,638,000
Shrimp, canned	77,000	192,000	352,000	735,000
Other products	1,242,000	1,438,000	5,026,000	4,774,000
Total	4,941,000	12,290,000	32,039,000	47,686,000

1/ Data furnished by Bureau of Foreign and Domestic Commerce.

Canada Supplies Major Part of U. S. Fish Imports in March

Fresh or frozen fresh-water fish from Canada, and filleted, pickled and salted salt-water fish from Canada, Newfoundland, and Labrador constituted the major part of the imports of edible fishery products into the United States in March. Fifty-three percent of the total imports came from Canada. The month's arrivals were 4 percent larger than those of February and 18 percent larger than those of March 1940. Other important sources besides Canada that shipped important quantities of fishery products to the United States included Newfoundland and Labrador, Portugal, Japan, Mexico, and Iceland.

Imports of Edible Fishery Products into the United States

Item	March 1941	March 1940	Three months ending with March 1941	Three months ending with March 1940
	Pounds	Pounds	Pounds	Pounds
Fresh or frozen:				
Fresh-water fish	5,983,000	5,313,000	19,890,000	19,033,000
Halibut	693,000	389,000	1,420,000	1,197,000
Salmon	610,000	162,000	1,227,000	574,000
Sea herring	1,157,000	297,000	2,889,000	1,225,000
Swordfish and sturgeon	12,000	181,000	121,000	482,000
Tuna	256,000	380,000	587,000	904,000
Fish filleted, skinned, boned, etc.	1,271,000	1,350,000	3,411,000	3,800,000
Smelts	652,000	863,000	4,431,000	4,094,000
Lobsters	1,111,000	574,000	3,689,000	2,776,000
Pickled or salted:				
Cod, haddock, hake, etc.	2,813,000	2,752,000	9,932,000	10,476,000
Herring	2,955,000	2,242,000	11,471,000	13,888,000
Canned:				
Crabmeat	327,000	230,000	689,000	8,938,000
Lobsters	208,000	76,000	399,000	253,000
Sardines	1,032,000	1,216,000	2,447,000	4,123,000
Tuna	227,000	219,000	749,000	3,439,000
Other, fresh, frozen, salted, canned, etc.	5,100,000	4,450,000	12,252,000	15,443,000
Total	24,407,000	20,694,000	75,604,000	90,645,000

Dominion of Canada Acts to Promote Canned Lobster Sales in the United States

A report received from the American Vice Consul at Ottawa describes a bill which received Royal Assent on April 4, 1941, amending sections of the Canadian Meat and Canned Foods Act. The amendments give the Department of Fisheries authority to recommend regulations regarding the labeling of canned fish and shellfish, to designate the sizes of tins in which fish and shellfish may be packed, and to establish grades for canned lobster. This authority will form the basis for installation of compulsory inspection, grading, and labeling requirements for canned lobster. The necessity for this work has arisen because of changes in the export markets for Canadian canned lobster due to war hostilities. Canada, until recently, enjoyed a comparatively extensive trade in this commodity with the United Kingdom, Sweden, and France. The Dominion is now attempting by advertising and other promotional efforts to expand its sales of canned lobster in the United States. The new legislation will permit activities that will result in a pack conforming to requirements in the United States markets.

The action taken by the Canadian Government had been previously recommended at a meeting of packers, fishermen, and dealers held in Moncton, New Brunswick, on November 5, 1940. That meeting, according to The Canadian Fisherman (December 1940), was called to consider the difficulties that would confront the lobster industry in 1941. The lobster canning industry is operating under a control scheme that functions in close cooperation with the Dominion Department of Fisheries. During the meeting the lobster canning industry requested the Government to continue its control through 1941 and adopted a resolution requesting the Government to operate for the 1941 season a compulsory grading and inspection of all canned lobsters.

The Canadian Fisherman also called attention to the results of the Canadian campaign for marketing canned lobsters. This publication quoted statements reporting an increase in sales in some cases as high as 450 percent compared with sales of previous years and anticipating that further increases in sales would result if the industry would adopt uniformity of lobster pack and labeling.

Canada Gains in Recent Shift of Dried Salt and Smoked Fish into the Dominican Republic

The March 1941 Canadian Fisherman describes an increase in Canadian trade with the Dominican Republic in dried salt and smoked fish during the first six months of 1940. A treaty between these two countries in March 1940 was held largely responsible for the increase. Imports of dried salt and smoked fish into the Dominican Republic from all sources during the six months' period totaled about one and one-half million pounds, of which about five hundred thousand pounds originated in Canada. This represented an increase of 711 percent in volume accompanied by a rise of 1277 percent in value over the totals for the corresponding period in 1939. During this period the total imports decreased approximately 12 percent in volume and those from the United States fell 61 percent. The increased trade with Canada is accompanied by a definite swing away from normal trade relations with France and its colonies. The latter decrease measured 68 percent in volume and 74 percent in value.

The decrease in imports from the United States is attributed to the fact that while arrangements were in force to handle imports from France a notable proportion of the Canadian business with the Dominican Republic was done through United States firms in Maine.

THE COVER PAGE

The Fish and Wildlife Service recently completed the construction of a laboratory at College Park, Maryland, on the campus of the University of Maryland. The building, pictured on the front cover, is of red-brick construction and conforms to the colonial style adopted by the University for its buildings.

The first two floors of the three-story structure are occupied by the fishery technology offices and laboratories of the Service which serve the industry of the eastern United States. The technological researches conducted here are designed to improve the techniques of preparation, processing, storage, and handling of fishery products, to develop new fishery products, uses, and processes, and otherwise to make complete use of the Nation's fishery resources.

Approximately half of the third floor is occupied by the central offices and laboratories of the shellfishery investigations. Here experiments and research are concerned with improvement of the quality of oyster meats, the improvement of oyster-farming methods, and studies of the physiology of oysters, as well as the detection and control of oyster pests and diseases.

The commercial fishery investigations of the Middle Atlantic region also occupy offices and laboratories on the third floor. The work of this unit is concerned with biological research designed to conserve and rehabilitate the commercial fisheries from New York to South Carolina.

Land for the building was donated by the University of Maryland. The presence of the laboratory on the campus gives opportunity to students for practical training in fishery work. The Service here provides opportunity for part-time employment to students and, in cooperation with the University, supports fellowships for graduate degrees in chemistry, bacteriology, and nutrition.

THREE PORT LANDINGS SHOW BIG GAIN IN MARCH

Statistical Bulletin 1419 discloses that the March landings by fishing vessels at the three ports of Boston and Gloucester, Mass., and Portland, Maine, by fishing vessels of five net tons and over totaled 35,427,000 pounds of fishery products, valued at $1,262,000. This was a gain of 28 percent in volume and 23 percent in value over the February totals and 47 percent in volume and 33 percent in value over the March 1940 figures. Large increases in landings of cod, haddock, and rosefish were mainly responsible for the gains. Boston received 74 percent of the landings, Gloucester 21 percent, and Portland 5 percent.

The volume and value of the landings for the first three months of 1941 were greater by 10 percent and 17 percent, respectively, than the volume and value for the January--March 1940 period.

FISHERY TRADE INDICATORS
(Expressed in Thousands of Pounds)

Item	Month	Latest month	Same month a year ago	Previous month
FRESH FISH LANDINGS				
Boston, Mass.	March	26,401	19,205	21,914
Gloucester, Mass.	do	7,335	3,662	4,672
Portland, Maine	do	1,692	1,225	1,121
Boston, Gloucester, and Portland:				
Cod	do	9,022	5,698	6,153
Haddock	do	13,865	10,158	11,434
Pollock	do	1,224	1,132	1,709
Rosefish	do	9,573	4,464	6,568
FISH RECEIPTS, CHICAGO 1/				
Salt-water fish	do	2,273	1,214	1,513
Fresh-water fish	do	3,467	3,087	3,693
Shellfish, etc.	do	501	738	670
By truck	do	2,303	1,851	1,796
By express	do	892	922	739
By freight	do	3,047	2,265	3,341
COLD-STORAGE HOLDINGS 2/				
New York, N. Y.:				
Salt-water fish	April	2,533	2,257	2,774
Fresh-water fish	do	1,657	1,914	2,128
Shellfish, etc.	do	371	480	772
Boston, Mass.:				
Salt-water fish	do	6,135	3,485	6,403
Fresh-water fish	do	17	10	30
Shellfish, etc.	do	115	250	310
Chicago, Ill.:				
Salt-water fish	do	1,494	937	1,547
Fresh-water fish	do	2,183	1,969	3,422
Shellfish, etc.	do	313	241	695
Unclassified	do	148	173	143
United States:				
Cod fillets	do	1,193	466	1,340
Haddock fillets	do	2,289	1,071	2,701
Halibut	do	2,367	1,102	3,547
Mackerel	do	876	1,833	2,251
Pollock fillets	do	1,917	1,794	3,231
Rosefish fillets	do	1,200	1,450	552
Salmon	do	3,383	2,256	4,439
Whiting	do	1,205	2,536	3,199
Shrimp	do	1,452	2,125	3,182
New England, all species	do	8,110	8,400	12,133
Middle Atlantic, all species	do	7,477	7,630	9,641
South Atlantic, all species	do	1,710	1,364	2,366
North Central East, all species	do	8,514	8,006	11,825
North Central West, all species	do	2,033	1,918	2,772
South Central, all species	do	1,295	763	1,985
Pacific, all species	do	6,429	6,754	8,735
FOREIGN FISHERY TRADE 3/				
Exports:				
All edible fishery commodities	March	4,941	12,290	16,516
Canned salmon	do	562	1,000	7,889
Canned sardines	do	3,060	9,660	6,459
Canned shrimp	do	99	192	136
Imports:				
All edible fishery commodities	do	24,407	20,694	23,500
Fresh-water fish and eels, fresh or frozen	do	5,983	5,313	6,823
Canned tuna	do	227	219	322
Canned sardines	do	1,032	1,216	773
Cod, haddock, hake, etc., pickled or salted	do	2,813	2,752	3,341
Herring, pickled or salted	do	2,955	2,242	2,389
Crab meat, sauce, etc.	do	327	230	124
Lobsters, not canned	do	1,111	574	1,044
Lobsters, canned	do	308	76	45

1/ Includes all arrivals as reported by express and rail terminals, and truck receipts as reported by wholesale dealers including smokers.

2/ Data for individual cities are as of the last Thursday of the month, except those at Boston which are for the last Wednesday of the month, and those for geographical areas and the total of the United States which are as of the 15th of the month.

3/ From data compiled by the Bureau of Foreign and Domestic Commerce.

Note.—Data for the latest month are subject to revision.

FISHERY MARKET NEWS

The information collected and compiled by the various Fishery Market News offices is disseminated both in printed form and by radio.

The printed releases consist of:

1. Daily mimeographed reports.
2. Monthly mimeographed summaries.
3. Periodic rotoprinted reviews. (Fishery Market News)
4. Annual mimeographed summaries.

The radio information consists of Market Broadcasts and Consumer Broadcasts:

1. Each week day - A Market Broadcast condensed from the Market News report is broadcast by a local station.
2. Four times weekly - Consumer Broadcasts suggesting good buys and giving useful information about the purchase or preparation of fish are broadcast by 10 to 20 stations within the area of local distribution.

The information issued by each of the various offices is indicated by an "x" in the following tabulation.

Office & Address	Reports & Summaries			Market Broadcasts*			
	Daily	Monthly	Annual	Station	Frequency	Time A.M.	Time P.M.
NEW YORK, N. Y. 33 A Fulton St.	x	x	x	WOR (Newark, N.J.)	710	6:10	-
BOSTON, Mass. 253½ Northern Ave.	x	x	x	WHDH	850	10:30	4:15
CHICAGO, Ill. 200 N. Jefferson St.	x	x	x	WJJD	1160	6:07	1:05
				KGBU	930	-	(9:00
SEATTLE, Wash. 417 Bell St. Terminal	x	x	x	(Ketchikan, Alaska)	-		(12:00
				KINY (Juneau, Alaska)	1460	-	9:00
JACKSONVILLE, Fla. 309 Duval Bldg.	x	x	x	WJAX	930	7:45	-
NEW ORLEANS, La. 11 Decatur St.	x	x	x	WWL	870	5:05	-
WASHINGTON, D. C.	-	**	-	-	-	-	-

* Consumer Broadcasts are released by all offices.

** Periodic review entitled Fishery Market News.

Requests to be placed upon mailing lists should be addressed to FISH and WILDLIFE SERVICE, FISHERY MARKET NEWS SERVICE. Reports or summaries should be requested from the regional offices and the periodic review from Washington. There is no charge for the publications listed.

FISH COOKERY IN THE OPEN

Special Memorandum 3215-A

Many of the inconveniences and annoyances that usually accompany our camping experiences can be eliminated through enlargement of our knowledge of fish cookery. "Fish Cookery in the Open" provides an opportunity to increase this knowledge.

This 25-page leaflet contains instructions for making and utilizing adequate fires, for preparing fish for cooking, and for cooking fish and shellfish. Recipes are included which cover frying, broiling, boiling, and baking fish, preparing sauces, making chowders, and cooking crawfish, shrimp, frog legs, crabs, clams, and oysters. The pamphlet also contains a generous offering of suggestions on other phases of camp operation and equipage.

Among the appetizing recipes appearing in this memorandum is the following:

Fish Chowder

3 pounds lean fish, cleaned, scaled, and with heads off
3 cups sliced potatoes
2/3 cup sliced onions
2/3 cup diced salt pork
1 quart milk
2 teaspoons salt
1/4 teaspoon pepper
2 cups water

Dried whole milk prepared for general use may be substituted for fresh milk, increasing salt to about 3 teaspoons.

In a kettle of at least 1 gallon capacity, fry the pork to a golden brown, add the onions and fry to a light yellow. Then add the potatoes, seasoning, and water; mix the whole. Lay the fish on top and cook about 5 minutes or until flesh can be separated from bones and skin. Lift the fish out carefully, separate flesh from skin, fins, and all bones. Return clear flesh to kettle, stir just enough to mix with the potatoes and cook until the latter are soft. Add warm (but not boiled) milk. Add hard crackers just before serving.

"Fish Cookery in the Open" may be obtained upon request from the Bureau of Fisheries, Washington, D. C.

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